CONNECTICUT INDUSTRY

NOVEMBER NUMBER

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THE MANUFACTURERS ASSOCIATION
OF CONNECTICUT, INC.

On November 1, 1928, the firm name of

HADFIELD, ROTHWELL AND SOULE

will be extended to include the name of

Charles F. Coates

who has been associated with the Firm since 1918
and became a General Partner on January 1, 1922

HADFIELD, ROTHWELL, SOULE AND COATES

CERTIFIED PUBLIC ACCOUNTANTS

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A Word of Explanation to New Friends

THE Manufacturers Association of Connecticut is a voluntary service organization made up of approximately 800 of the representative industries of Connecticut, which in turn employ approximately 225,000 workers and represent invested capital of over $692,000,000.

The Association was incorporated in 1910 and has for its object the advancement of the interest and welfare of its manufacturers and of the State of Connecticut as a whole. It serves its members in all matters in which they have a common or an individual interest. It speaks for them before Congress, at the State Legislature, before the Interstate Commerce Commission, or wherever united representation is required. Through the medium of *Connecticut Industry* and a special bulletin service, it keeps members advised of matters of importance, whether this be in the field of human relations, federal or state taxation, transportation, research, power, national or state legislation, or any one of the hundred other subjects in which the manufacturer of today is keenly interested. Under the direction of its Board of Directors and its committees, composed of industrial leaders who give generously of their time to Association affairs, it is guided in the difficult problems which beset industry at every step and the ultimate and satisfactory solutions of which are so vitally important in a state as highly industrialized as is Connecticut. Over seventy prominent industrialists, each an expert in his field, serve upon these committees, giving the benefit of their wide experience to the membership at large, and in this self-sacrificing interest lies the organization's greatest strength.

It is the aim of the Association to be constructive and progressive and to help make Connecticut the best state in the Union industrially and every other way. In addition to serving its members, the information which it compiles on numerous matters of general public interest is available for the use of the state and for outside research organizations.

From clipper ships to an annual carrying capacity of 1,200,000 tons

Since the days of clipper ships, when hardy mariners sailed around the "Horn," the American-Hawaiian Steamship Company has maintained the most frequent and dependable freight service of any line. "Coast-to-Coast since 1855" has a wealth of meaning. It indicates that this line has kept pace with the phenomenal growth of the West and the tremendous increase in traffic moving from coast to coast.

The era of the Cape Horners has passed. Today the American-Hawaiian Steamship Company — the *Panama Canal Line* — operates twenty-three express steamers and motor ships with transportation facilities of over a million tons, carrying cargoes worth millions of dollars, from coast to coast efficiently and on schedule.

In a recent year but three vessels were late out of an average sailing of one ship every four and three-quarter days. In 1927, with sailings increased to a four day schedule, the percentage of on-time arrivals was ninety-six percent.

No matter what your product — if you are manufacturing on the Atlantic seaboard for far-Western markets — if you are producing on the Pacific slope for Eastern consumption — consign your shipments to the American-Hawaiian Steamship Company and know that they will arrive safely, surely and on time. Service from Boston, New York, Philadelphia and Charleston to Los Angeles, San Francisco, Oakland, Portland, Seattle and Tacoma through the Panama Canal. Our local office will be glad to confer with your traffic manager.

THE PANAMA CANAL LINE A-H

AMERICAN-HAWAIIAN STEAMSHIP COMPANY

"Coast-to-Coast Since 1855"

CONNECTICUT INDUSTRY

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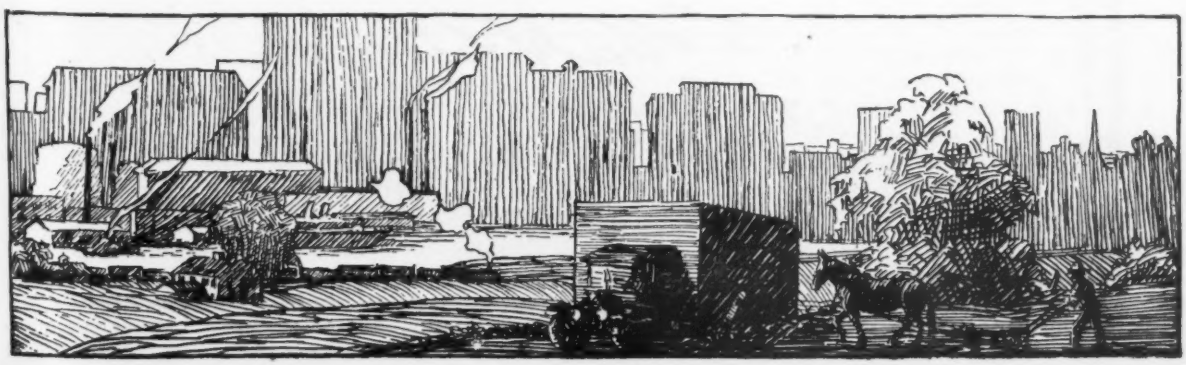
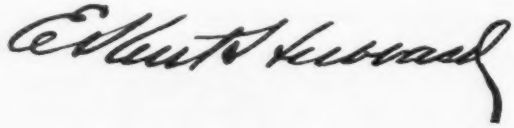


CONNECTICUT'S FOREIGN TRADE

The Foreign Trade Conference held in Hartford on October 24 clearly indicated that there is a tremendous uncrystallized interest in the development of Connecticut's foreign trade. This is as it should be, for with the handicaps that are being encountered in the development of domestic trade, an outlet must be found for Connecticut's manufactured products.

Dr. Julius Klein, head of the Bureau of Foreign and Domestic Commerce, in his address to those assembled at the above-named conference, intimated that he was of the opinion that a District Office of the Bureau which he heads should be established in the state of Connecticut. In Dr. Klein we have a man who knows intimately the problems of import and export. He sees the possibilities here in Connecticut, more clearly perhaps than do many of our own people.

In the same address he made the announcement of the inauguration of a Co-operative Office of the Bureau at the headquarters of the Manufacturers' Association of Connecticut. Similar offices are to be established in New Haven and Waterbury. Bridgeport has had such an office for some years. It is incumbent upon the manufacturers of the state to use the facilities offered by these offices, and it is necessary that sufficient interest be shown in the question of foreign trade so that there will be no doubt in the minds of the members of Congress as to the necessity for the establishment of a District Office of the Bureau of Foreign and Domestic Commerce in this great industrial state.



The Executive's Use of Cost Accounts

By CHARLES REITELL, Ph.D.

Research Director — Citizens' Committee of Pittsburgh

DECISIONS affecting the administration of industry must ever rest with the executives. Theirs is the responsibility for carrying out the plans, designs, and policies of the organization. And it is they who must be served by any division of the enterprise whose function it is to collect, interpret, and present data. Cost accounting is such a division. Thus, right at the start, we lay down the basic principle that costs must be collected, compiled, shaped, and presented to meet the specific needs of the executive who is to use them.

Today, the executive is obliged to rely upon statistical and accounting data, for the formulation of policy, the establishment of controls, and the guidance of the activities for which he is responsible. No more can he draw conclusions from first hand observations or from his own personal experiences. Business is too integrated and complex for that. *His judgments must rest on reported fact.* And, obviously, the presentation of cost data for the different types of executives must be greatly varied as to form, content, time, and scope, if that presentation is to meet the varied needs of those who use it. In short, the presentation must be adapted to the need.

This paper was delivered by Dr. Reitell at the Cost Conference held at the Hotel Bond, September 25, under the joint sponsorship of the Hartford Chapter, National Association of Cost Accountants, and the Manufacturers Association of Connecticut. It is a shorter form of his essay on "The Presentation of Costs for Executives," which was awarded the Scovill prize of $750 offered by the National Association of Cost Accountants in 1927.

Dr. Reitell has had several years of practical and academic experience in the accounting field. He has articles in numerous periodicals, and is the author of several economic works. He is now head of the accounting department at the University of Pittsburgh, and is research director of the Pittsburgh Citizen's Committee on Teachers' Salaries.

What Do Executives Do?

Recently, I walked into the office of a close friend who is general manager of a manufacturing plant in Pittsburgh. He was smoking a Pittsburgh stogy, his feet were on his desk, which was clear of everything else save inkwells, pencils and pens. He was reading the sport page. Here was a high priced executive of a very busy plant — absolutely doing nothing. Naturally my initial remarks were, "How do you get away with loafing while the plant is running at full tilt?" Quick and to the point was his comeback, "My dear sir, I know full well that every division of the plant over which I have authority is clicking 100%. Were it not so, you would be unable to come in here; for politely, but firmly, you would have been told 'He is very busy and can see no one'."

Whether he knew it or not, this manager typifies the newer executive. With standardization and a growth in uniform practices, plant managers now find themselves more and more concentrating their attention on exceptional matters. This tendency is closely linked with newer phases of cost accounts. The executive who is freeing himself from daily nerve-racking details has substituted reports that bring to him in summary form information of the division under his control. Such reports may show the out-of-line, off-standard conditions, with definite reasons for the lapses from uniformity. Again, every phase of production is costed so as to register the value lost or gained by faulty or

off-standard tendencies.

This freeing of the higher executives from routine suggests at once that other minor executives must carry the routine responsibilities. It also suggests forthwith that cost reports for one type of executive will differ from those going to other officials.

It is often taken for granted that the same cost report ground out by the accounting mill will serve equally well the many different kinds of managers found in a typical plant. Such an assumption is doubly damnable. It wastes the money and time spent upon collecting costs, and it results in management looking upon costs as a wasteful tool that might as well be scrapped. To give a general manager minor detail costs that can only be of operating value to foremen, or to give a foreman a broad summary cost report that only a general manager can use, kills the interest of both in cost records. Glory-be, it should! When I go fishing I choose carefully the lure that will appeal to a specific kind of fish at a specific season of the year, in a specific time of day, in specific waters. The modern cost-man must follow the same principle. Effective cost accounting yields a specific type of cost report to meet the specific needs of a specific manager on a specific subject he has in hand.

C. B. COOK,
Chairman Joint Committee

Functionally considered, manufacturing plant executives fall into three groups:

1. Minor plant managers
2. General or departmental managers
3. Technical or specialized managers

The classification is a bit arbitrary, but in the main it coincides nicely with conditions in many typical manufacturing concerns. Furthermore, the cost reports embodied in this paper, which are taken from actual industry, classify without trouble into the three-fold divisions suggested.

Reports for Minor Plant Managers

Minor plant managers include foremen, section chiefs, gang bosses, master mechanics, chief store keepers, inspection chiefs, etc. These lesser plant managers are right up against the fellows who do the manual and mental work on the operations. They direct performance at first hand. The assistance that costs can give to these minor managers in building plant morale is amazing. For instance, a daily cost report to a foreman, which shows why and to what extent certain workers are missing their bonus, means that the foreman can help the worker improve his work and bonus. Thus worker, foreman, and cost-man enter into a wholesome triple alliance.

Time will not permit my using more than two reports that are of value to these minor executives. They will encourage both executives and accountants, I trust, to go further into the many other forms that are of use to minor plant managers. The first report, which has been suggested by Mr. A. W. Bass, of Westinghouse Electric and Manufacturing Company, and now president of the Pittsburgh Chapter of the N. A. C. A. is one that carries merit in bringing to the foreman an analysis of performance of each of the men under his section.

The purpose of this report is to give daily to the foreman the data as to the extent and reason for off-standard performance in his section. On this day, it will be observed, $90.15 was allowed as a budget amount to cover the direct labor jobs of the section. The actual cost exceeded the budget allowance, running up to $100.37. The very next day the foreman had before him a list of those operations that failed, the extent of the failure, and the specific reasons for the excess costs.

Catch the underlying principle in this type of report. It nips in the bud mistakes that retard operators. These reports need not, in fact should not be, continuous. Use them where the sections are falling down; when they improve, cease this control.

The cost plowshare is driving into new ground where it attempts to cover the manufacturing budget. The second report is a daily presentation that goes to the foreman in a Pittsburgh pipe products plant which operates on a manufacturing budget basis. This report is given only in part and is only one of several in their budget system. It is used for listing daily happenings. From it a weekly report

is made not only for foremen but for superintendents and the general manager as well. Each minor plant manager is responsible for his division. It should be noted that the overheads are divided into fixed and variable items. These variable items are the controllable ones, which are charged to the responsibility of definite minor managers.

Cost Reports for Departmental Managers

The scope of a departmental manager's authority is confined to a specific division of an enterprise, usually termed a department. The department is made up of sections, gangs, or branches, each of which has a minor plant manager as its head. To illustrate, the superintendent of the machine shop has several foremen who have control of the different sections: one or two production foremen, a repair boss, an inspection boss, a storekeeper, and one or more labor bosses. The chief functions of this superintendent are (1) the supervision of these minor executives; and (2) the coordination of their work into a unified working shop.

COST REPORT NO. 1

SECTIONAL COST REPORT

No. 842 Date: Jan. 18, 1927 Dept. L. I. M. Sec. 5 Brackets

Actual Labor Cost for Day, $100.37 Budget, $90.15

Ck. No.	Operations Delinquent	Actual	Budget	Remarks
15	Rough Bore and Face	$5.04	$3.89	Operator Slow
18	Drill Stud Holes	2.94	1.77	Man on Woman's Job
23	Face and Fit	6.64	5.56	Too high rated operator
71	File	2.50		Extra Operation Rough Material
84	Bore and Face 2nd	1.18	.54	Extra set-up needed
87	Complete Fit	4.72	1.88	Slow on account of poor material
92	Clean and Paint	1.56	.72	Rough work — poor material
		$24.58	$14.36	
	Balance of Section Meets Standard	75.79	75.79	
	Total	$100.37	$90.15	

Foreman Action Completed

This budget system works, and the general manager listed for me the advantages it has brought into his administration:

"First: It works! We get definite controls.

"Second: It is simple! A girl clerk spends less than a half hour per day making the entries.

"Third: It helps our foremen! We give him in detail daily a report on how his expenditures stack up with the budget.

"Fourth: It portrays the exact costs of idle capacity which is a dangerous factor in our concern."

I have yet to come across a manufacturing budget that works with the simplicity and ease of this one. The system has been installed in several concerns with surprising and excellent results.

A department manager is also responsible for keeping up a working relation between such elements as are beyond the specific jurisdiction of any of the minor executives. Correct materials and their smooth flow through the shop must be regulated, idle machinery must be kept to a minimum, special and rush orders must be guided, new work must be carefully supervised and measured, general items of plant overhead must be watched, and friction must be kept down. Each of these are beyond the minor

manager's responsibility. In short, a departmental executive, like the colonel in an army, has a group of subdivisions each of which must be given opportunity to carry out their own work without handicaps, and at the same time must be coordinated with the other subdivisions. Unlike a minor manager, his guidance and control are not concerned with an individual piece graphing of these results is highly advisable for visualizing better the contrast between actual and budgeted performance in each section.

The growth of large investments in mechanical equipment, the advances made in high-speed tools with corresponding rapid output of production, and the inter-relation between the operations of one machine with those preceding

COST REPORT NO. 2

MANUFACTURING EXPENSE BUDGET

Daily Allow	Budget $1,100		Budget 800	Budget 450		Budget 400		Budget 125	
Date	Direct Labor	Remarks	Fixed Charges Non. Var.	Indirect Labor Foreman Clarke	Remarks	Fuel Oil Storekeeper Edwards	Remarks	Coal Engine Room Stack House	Remarks
1	1,075		800	465		381		106	
2	1,116		800	454		702		98	
3	1,208		800	225		406		121	
4	1,084		800	380		385		111	
			00	28		416		119	
29	1,210		800	492		408		108	
30	1,155		800	414		381		91	
31	1,116		800	438		397		124	
Totals									

of work or an individual person or persons, but rather with those who in turn guide and control these individual factors.

The third report is one showing the efficiency of production of all the sections of a department. The actual direct labor expended by each section for the day is thrown against the budget allotment. These daily reports are summarized in a major report at the end of a month. Upon this monthly report salary bonuses are based.

Compare this report with Report No. 1. There could be no better contrast between the type of presentation that should go to minor managers and the kind that should be prepared for department heads. The former report lists individual workers, and is used mainly to check poor production at the source. This present report, in contrast, is a summary, and gives sections but no individual names. A healthy sectional rivalry can be built up in such a department by using the data found in this report. There is no harm in giving the report to each of the section foremen and letting them see how efficiently their section is producing, compared with other divisions. A monthly

and following it, make acute the problem of idle capacity in industry. Individual measurement of the extent to which each machine-tool is idle may be left to the foremen who can readily analyze specific causes of idleness, such as lack of power, breakdown, no material, etc. The control of it, however, rests with a higher manager whose duty it is to correlate production, power, materials, men and machines. Idleness is a problem that can be controlled to a much larger degree than is at first believed. When the significance of idleness is once brought to the attention of a superintendent, many things can be done to correct this heavy item of cost.

The cause may be due to inadequacy, or total absence of a system of planning and scheduling work; it may be due to the faulty flow of material; it may be due to failure of power; it may be due to repairs; it may be due to lack of orders; and it may be due to absenteeism among highly skilled operators. All of these are common causes. Many of them can be remedied or lessened by careful supervision. The first step in gaining a desired control over idleness is to measure its extent and what it is costing

the plant. This alone will start constructive thinking in the plant management. The second step is to spot or localize the idleness and to determine its causes. With this data at hand, much in the way of improvement is possible.

Report No. 4 is a departmental cost report which calls attention to the extent of idle capacity of the different sections. This report is summarized from the daily reports coming from the foremen, which show in detail the specific machines idle, the extent to which each was idle, the cause, and the cost of such idleness based on an idle burden rate. These idle burden rates are the active burden rate minus such factors as power, lubrication, and some supervision.

The sections used in this illustration are in small machine tool departments; therefore the machine rate for the idle burden is comparatively low, averaging for the whole department ninety cents per hour. In the large machine tool departments, it is not unusual to find active burden rates grouping from $3.50 to $7.00 per hour with idle burden rates for the same machines between $2.00 and $4.50.

The magnitude of machine development in industry during the last decade is nothing short of amazing. This shift from manual to machine production emphasized the need for a more rigid control of machine operation. This control must be achieved by two distinct procedures. First, idle machinery must be kept down to the lowest possible amount; second, machinery must not be allowed to work in low off-standard condition. Idle capacity reports like the one mentioned, coupled with the daily ones coming from the minor executives, will do much to control idleness. Reports of off-standard performance, such as I have shown, will tend to keep performance at an efficient pace.

COST REPORT NO. 3

DEPARTMENT OP. PLANT
COST REPORT

Date: Jan. 18, 1927 Dept. ....." Large Induction Motor "....

Actual Direct Labor Cost for Day, $1,477.90 Standard, $1,277.02

Sec. No.	Name	Actual	Standard	Average %	Remarks
T 1	Bearing	$98.35	$88.00	12%	
T 2	Assembly A	125.90	110.67	14%	
T 3	Winding	170.00	145.00	17%	
T 4	Brush Holder	140.00	125.00	12%	
T 5	Commutator	161.45	141.85	14%	
T 6	Core Building	97.75	82.92	18%	
T 7	Shaft	112.28	97.32	15%	
S 2	Assembly B	95.35	80.92	18%	
S 3	Paint	117.84	101.00	16%	
S 4	Frames	137.43	110.68	24%	
S 5	Brackets	100.37	90.15	11%	
W 14	Coils	121.18	103.51	17%	
		$1,477.90	$1,277.02	16%	

An exhaustive portrayal of all the different presentations for the many kinds of departmental heads would be impossible, even in a goodly sized book. Only the surface can be scratched and a few examples portrayed.

Reports for Specialized Managers

George Bernard Shaw made a choice statement the other day when he said that big business is compelled to employ highly specialized, thoroughly trained men to do some real thinking about the business as the regular executives were all too busy to think. More truth than G. B. Shaw realized! Industry is developing high grade technicians who in the fields of re-

search, experimentation, and new processing are contributing much toward a better day in production. Chemists, physicists, research fellows, power experts and the like, are now found in every well-organized industry. Their functions differ from the departmental manager in that their responsibility is not the guiding and and detailed requirements. Often these costs must be presented dozens of times in order to show every detail of improvement that is made.

Principles of Cost Reports

All too briefly we have scanned different suggestive types of reports that should be sub-

COST REPORT NO. 4

DOWN HOURS — DEPT. E
WEEK OF SEPT. 11-17, 1927

Section No.		Full Capacity Hours	Scheduled Hours	Actual Hours Operated	OFF Capacity Hours	Off Schedule Hours	Loss of Down Hours under Schedule	Remarks
2	Cutting Small	135	105	101	34	4	$3.60	Waiting for material
3	Cutting Large	135	135	132		3	2.40	Delay — no operator
5	Threading and tapping	135	125	124	10	1	1.00	Late starting on machine No. 6 and No. 11
6	Bending	135	135	129		6	4.50	Breakdown — one Bendor Motor
9	Nickeling	120	100	100	20			
11	Polishing	120	100	100	20			
12	Assembly	135	110	115		5		

Remarks — Foremen's Meeting
September 19, 1927.

teaching of men, but rather research and investigation into new fields.

Cost reports of a very high calibre are needed by these specialized managers. Dr. Edward Weidlein, director of the Mellon Institute of Industrial Research, has well said, " Research and experimental work, whether carried on in our institute or in the individual plant, must have cost accounting as a necessary tool for measuring in dollars and cents the value of each improvement as it is perfected." To show the importance of cost accounting, Dr. Weidlein further states, " We look askance upon taking up research with any specific industry whose cost work is inferior."

Yet, not enough attention has been paid to reports for this class of managers. Report No. 5 is suggestive of the costing unit that must come with experimental work.

Should time permit we might well consider how these reports are produced by the cost division. But it must suffice to realize that cost reports for special managers must meet specific

mitted to different types of plant managers. Let us summarize by presenting the underlying principles that govern the type of report that is desirable.

Principle No. 1. Cost Reports should be shaped to meet the needs of particular executives. This principle is the dominant note of this paper. Cost accounting must *serve,* which means that cost reports should be presented in such shape as will best meet the needs of those who use them.

Principle No. 2. The time sweep covered by a cost report varies with the degree of managerial responsibility. Minor plant managers will need reports covering the day's or week's performance. Departmental managers will demand monthly reports, while the specialized managers may demand reports that will run over periods as long as three or four years.

Principle No. 3. Cost reports shift from measuring individuals and individual items under minor managers to measuring departmental summaries and trends, or specific devel-

opment, for the higher plant managers. The minor manager wants cost on specific performance so that specific corrections may be made, while the departmental manager needs such reports as will show groups, gangs, sections, and units taken in their entirety. The specialized manager, in contrast, will demand reports In the main, this new use ties in with the measurement of performance, — performance of both men and machines. To get the maximum amount of accomplishment in the minimum amount of time is the goal of both the production and the cost men. Reports such as were shown emphasize the time element. No

COST REPORT NO. 5

Type No. A 28 — " Curb Stand W " File .....
Experiment Runs — 100 Units Trans.
Direct Labor — Dept B to Prod. .....

No.	Operation Name	Cost Aug. 29	Cost Aug. 31	Cost Sept. 7	Cost Sept. 17	Cost Sept. 21	Cost Sept. 24	Avg.	High	Low	Rec. Rate
11	Cut 1" Pipe	.0083	.0076	.0076	.0075	.0072	.0071	.00755	.0083	.0071	.0073
17	Bending	.0132	.0137	.014	.0132	.0130	.0128	.0133	.014	.0128	.013
19	Drill & Lay-off	.0127	.0129	.012	.0115	.0112	.0112	.0119	.0129	.0112	.0112
24	Put in Swing Bolts	.0077	.0079	.0079	.0065	.0063	.0063	.0071	.0079	.0063	.0065
25	Paint	.015	.015	.014	.0073	.0072	.0072	.011	.015	.0072	.0072
37	L. & R. Thread	.0071	.007	.0065	.0052	.0053	.0057	.0061	.0071	.0052	.0055
12	Cut ½" Pipe	.004	.0038	.0037	.0039	.0031	.0034	.00365	.004	.0031	.0035
20	Drill ½" Pipe	.007	.0068	.007	.0067	.0066	.0067	.0068	.007	.0066	.0067

Suggested Units to the Run, 300 Total — $.0609
(Run of 600)

Color — Duco, Chinese Red

Piece Rate & Est. Rate, $.0609 Albert Stoner — Cost Engineer.

suited to the highly specialized needs of the problem at hand.

Principle No. 4. The higher the manager the greater the care that should be given to the permanency and general form of the cost report. This principle is obvious but it needs emphasis. Clearness and simplicity are essential to all good cost reporting. Cost material that is complex is fit only for the waste basket. Yet, the report should be cast in a form that will be useful for purposes of comparison.

Again, where the reports are to be filed and constantly referred to, neat attractive binding is also advisable. Plant managers are not " yelling their heads off " to get cost reports as much as cost accountants think. We must start a real job in salesmanship if we are to win the shop managers. A neat attractive package, therefore, is necessary.

The Dynamic Use of Cost Reports

Progress consists in the evolution of new things. Cost accounting is no exception to this general rule of progress. The application of cost reports to managerial problems is one of the latest strides that costing has attempted. clock watching, no lazy careless operation can long endure, when, by scientific recording, the performance that should be accomplished in a given time is made known to each worker, and to each minor and major unit within a plant. Thus cost complications will act as a barometer for executives telling them specifically when, where, and why, bad off-standard, or off-quota conditions are existing and what the costs of those lapses from normal amount to, in dollars and cents. This means that factory accounting plays an active and dominant part in the operating affairs of the enterprise.

It means the dynamic use of costs. Such a new use of costs calls for a newer type of cost accountant as well. He much have much of both the leader and the scientist in him. He must be a man with technical ability and an abundance of imagination. Far more than heretofore this new phase of costs will place him in the front line of plant activities.

Also the world-wide shift from manual to machine production intensifies the importance of these newer uses of costs. These changes in mechanical invention, with corresponding large fixed investment, tie up each productive worker

to an element of cost far beyond his individual wages. When we have machine overheads ranging from 75¢ to $25 per hour, the off-standard productive capacity of the operator is not so much a matter of wage cost as it is a matter of high machine cost. *Yet it is the worker's efficiency or inefficiency that entails heavy machine costs.* Make no mistake about it — that is the dominant reason why performance control is becoming so increasingly important in mechanical industry.

I am deeply impressed with the possibilities that are close at hand for cost accountants and plant managers the moment we catch the significance of these changes that come with the machine and with standardization. There dawns a magnetism in our work that never existed before. Standard costs will bring in still greater benefits when the presentation of data coming from standard costs is used by the managers as their most valuable tool in controlling and guiding operations and mechanical equipment.

For the cost accountant to win over the managers to these new uses of cost is no child's play. It requires the most expert convincing ability. Let us always remember that it is not only the excellence of the cost presentation that assures results, but whether the manager who gets the presentations uses them. He must be won over to our point of view. To do this, the presentations must meet his own particular, and perhaps peculiar, wishes. Also they must be simple and clear, pointing out abnormal or exceptional matters that can't help registering upon the executive's mind.

All cost reporting, therefore, must ever rest upon a foundation of cooperation and mutual understanding between cost men and plant managers. When that solid foundation is once established, then cost reports will gain the importance and effectiveness that rightly belongs to them.

LEONARD S. TYLER

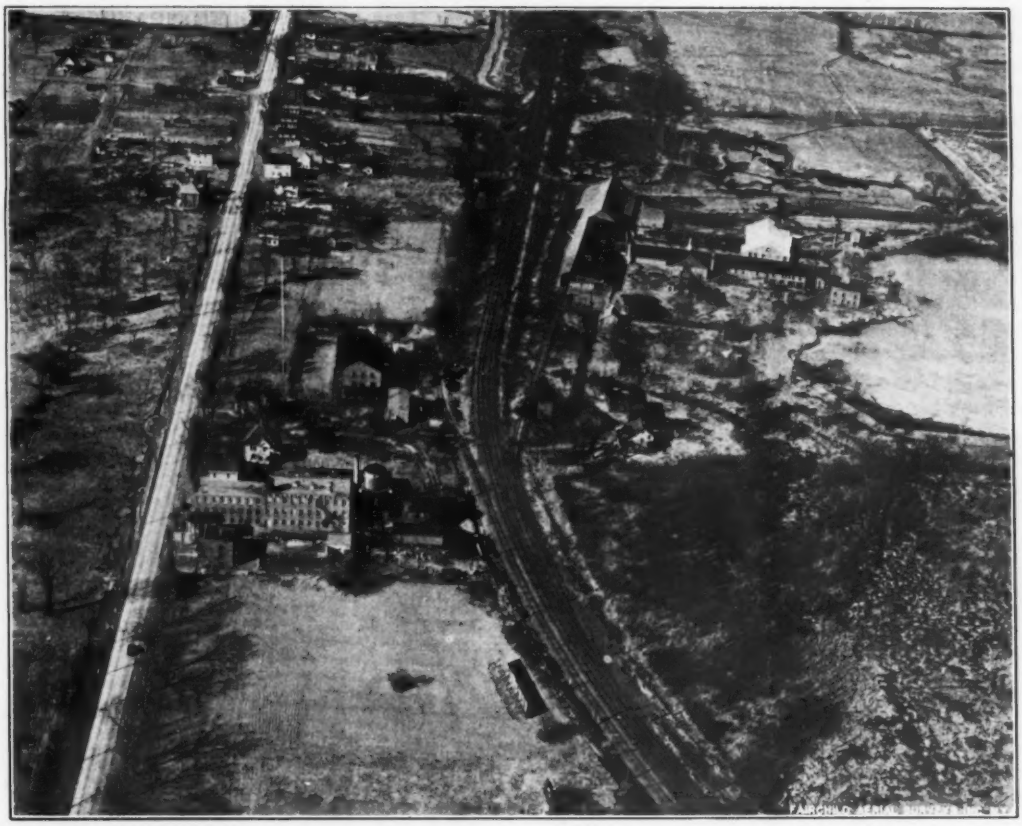
WHEREAS, Leonard Sanford Tyler was for many years an official of the Acme Wire Company of New Haven, an outstanding industrialist whose opinion was highly valued by the many who sought his counsel; and

WHEREAS, he gave unstintingly of his time and his energy in the promotion of the interests of Connecticut manufacturers as a whole, particularly through his efforts in connection with the organization and operation of the co-operative research plan of the Manufacturers Association of Connecticut and Yale University; and

WHEREAS, Leonard Tyler was admired by the many who knew him as an industrial executive and friend; therefore, —

BE IT RESOLVED, that the officers and the Board of Directors of the Manufacturers Association of Connecticut do extend to Mrs. Tyler and her children, Matilda Tyler, Mary Butler Tyler, and Franklin Jaynes Tyler, and to the brothers of Leonard Tyler, Ernest Tyler, Victor M. Tyler and Audubon Tyler, their deepest sympathy in the loss which they and Connecticut industry have suffered; and

BE IT FURTHER RESOLVED, that this resolution be spread upon the permanent records of the Manufacturers Association of Connecticut.



Courtesy Fairchild Aerial Surveys, Inc. and L. & H. Aircraft Corp.

AERIAL VIEW OF THE G. E. PRENTICE MANUFACTURING CO., BERLIN

The G. E. Prentice Manufacturing Company was organized in 1912 with a very small capital, occupying a rented building of 3600 square feet. Since then their paid-in capital has been increased to $250,000, and the floor space occupied including their branch factory at New Britain to about 50,000 square feet. They have built up an enviable reputation with users of ladies' and men's belt buckles, suspender trimmings, shoe trimmings, fishing tackle mountings and other sheet metal and wire articles.

Industrial News Around the State

Large Attendance at Cost Conference

The cooperative program between the Hartford Chapter, National Association of Cost Accountants, and the Manufacturers' Association of Connecticut was inaugurated by a one-day cost conference held at the Hotel Bond in Hartford on September 25. About two hundred industrial executives and accountants attended.

The aim of this cooperative activity, as members know, is to minimize unintelligent competition based on inadequate cost information, by spreading an appreciation of the value and necessity of sound data on manufacturing costs. The object of the full-day conference, besides inaugurating the cooperative program for the 1928-29 season, was to allow of a more comprehensive treatment of several phases of the

broad subject than is permitted in the shorter monthly evening sessions.

At the morning session Paul M. Mazur, economist of Lehman Brothers of New York, discussed "The Profit Trend in Modern Industry." Charles R. Stevenson, senior partner of Stevenson, Harrison & Jordan, and past president of the National Association of Cost Accountants, delivered a paper on "The Economic Effect of Taking Business At or Below Normal Cost." The luncheon speakers were Governor Trumbull; President Hubbard of the Manufacturers' Association of Connecticut; Frank L. Sweetser, treasurer and general manager of the Dutchess Manufacturing Company, and president of the National Association of Cost Accountants; and Charles R. Ogsbury, of the Tabulating Machine Company, and president of the Hartford Chapter, National Association of Cost Accountants.

Charles A. Williams, comptroller of the American Safety Razor Corporation, addressed the afternoon session on "Industrial Accounting, Its Scope and Value." The concluding paper of the day was "Executive's Use of Cost Accounting" by Dr. Charles Reitell, professor of accounting at the University of Pittsburgh. Dr. Reitell's paper is printed elsewhere in this issue.

Expansion of "Talking Movies"

In connection with our announcement in the October number of *Connecticut Industry* of the synchronization of films to words and music by the Bristol Company of Waterbury, officials of that company have submitted plans for a new steel structure costing approximately $25,000, to be used expressly for making and testing movie-tone devices. Professor Bristol has stated that later movie scenes will also be produced in Waterbury, though for a short time only, since it is planned to move the center to New York, retaining only the experimental station in Waterbury.

Harvey Hubbell Promotions

The directors of Harvey Hubbell, Inc., of Bridgeport, in September appointed Louis R. Edwards secretary and assistant treasurer and Harry L. Sterling assistant secretary. George Sherman Hadley of that company, who died recently, was secretary.

T. A. D. Jones & Company Coal Dock

The new coal handling plant of the T. A. D. Jones Company Inc. in New Haven, built to replace smaller dockage space destroyed by fire some time ago, has recently been put into operation. It provides the most modern equipment available in this section of the country and affords unexcelled facilities for the rapid handling of enormous tonnage. The pier, shown in the above photograph has two unloading towers and cranes from which the coal is carried by an overhead belt line back to a point where railroad cars and barges are loaded. If held for storage the coal goes back to storage pits beyond, which have a capacity of 100,000 tons.

Steamships of the capacity of the S/S *Henry D. Whiton* shown in the above picture, and even larger are now transporting coal regularly from Hampton Roads to the Jones dock. The depth of the water around the pier makes it possible to use these larger vessels and thus avoid the use of barges which are frequently subject to long delays if rough weather is encountered.

Advertising Headline: "New Arrivals in Paris Bags." Is this a new kind of knicker?

Al Smith claims he has hailed Hoover before the American public, but at this writing he hasn't snowed him under yet!

Brake Lining Made in Canada

The Russell Manufacturing Company of Middletown have announced the construction of a factory in St. John's, Quebec, for the manufacture of brake linings to supply the motor industry in Canada. The process will be an exact duplicate of that used at Middletown where the concern has been specializing in the art of weaving since 1830. It is probable that many other lines of webbing, belting and aviation specialties will be produced as well. Recently a conference of division managers was held in Middletown to inspect the new line of aviation specialties, which include Rusco shock absorbers and shock cords for planes.

There exists a real opportunity to purchase an old established wire specialty concern located in Deep River.

The Chase Trade Mark

A new trade mark has been adopted by the Chase Companies, Waterbury, for all its products which will replace the "Chase diamond" formerly used.

The new mark is a red figure of a centaur, half man and half horse, with bent bow and drawn arrow — illustrative of the "chase." Products of the Waterbury Manufacturing Company, Chase Metal Works and Chase Rolling Mills will be sold under this mark. The Chase name and mark also supplants that of the Hungerford Brass & Copper Company, an independent brass selling organization now owned by the Chase Companies.

Oxygen Company Sold

The Tariffville Oxygen and Chemical Company of Tariffville has been taken over by the International Oxygen Company of Newark, N. J. and will be known as the Tariffville Oxygen Company, New England Division of the International Oxygen Company. It will continue to manufacture oxygen, hydrogen and acetylene and in addition the other products of the International Company.

New Departure to Enlarge

The announcement has been made that the New Departure Manufacturing Company of Bristol has awarded a contract for a new addition to its forge plant, which at the present time is the largest of its kind in the world.

Mallory Hat Expansion

A merchandising enterprise, unique in the men's hat trade, is the organization of the Burton-Taylor Division of the Mallory Hat Company of Danbury to handle a new line of felt and straw hats, to be nationally advertised and sold under that name. The Burton-Taylor hats will be identical in quality and price with the Mallory Hats and will be sold by the same selling staff.

New Building in Oakville

The 75-year-old factory building of Seymour Smith & Sons in Oakville has been torn down and in its place a new 2½-story brick building has been erected. A new 50,000 gallon tank and water tower are part of the new construction.

William H. Edsall Resigns

William H. Edsall, General Manager of the Wallingford factory of the H. L. Judd Company, has resigned and will retire from business. He has been associated with the Wallingford factory since its establishment.

More Connecticut to the South Pole

In addition to the Connecticut products listed in the October issue of *Connecticut Industry* as being part of the Byrd expedition, we wish to add the high voltage motor generators and dynamotors with which to operate radio transmission sets, made by the Electric Specialty Company of Stamford.

Parachute Silks

At a meeting of government officials held in Washington recently the silk manufacturers of the country presented the results of their experiment on parachute fabrics. Among the plans presented were those of Austin Cheney of Cheney Brothers, South Manchester, and W. A. Leavy of Schwarzenbach, Huber & Company, Norwich, for parachute silks.

Open Shop Conference Annual Meeting

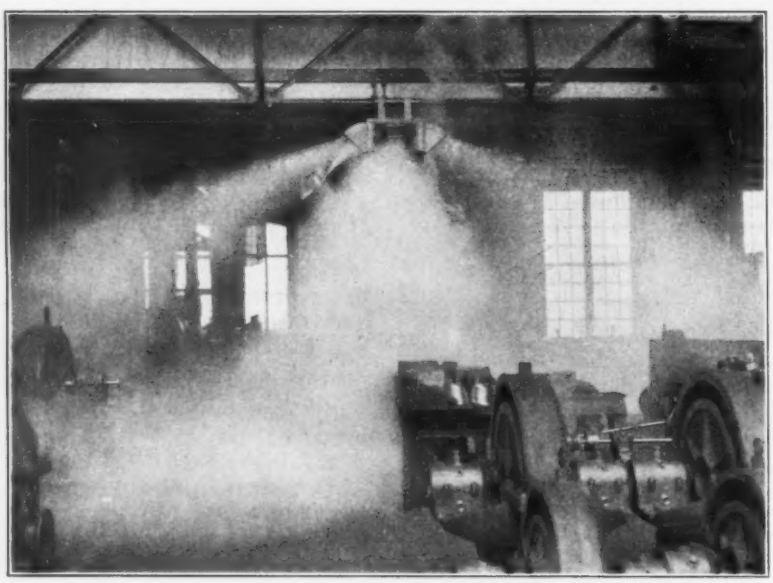
At the annual meeting of the Open Shop Conference of Connecticut held recently, Charles H. Granger, superintendent of the Waterbury Clock Company of Waterbury was elected chairman. Other officers elected were E. M. Walsh, New Haven, vice-chairman; T. J. Kelley, Hartford, honorary vice-chairman; W. J. Wilcox and M. A. Clark of Meriden who were reelected secretary and educational secretary respectively. Hollis D. Immick was elected treasurer.

Cost Cutting Through Temperature Control

By C. OAKLEY BARING

President, Minneapolis Heat Regulator Sales, Inc.

RECENTLY a prominent manufacturer of power units said, "Nobody wants to buy anything. I, myself, don't want to buy anything, but if a salesman comes to me and shows me a product which will increase our production, decrease our expense or quicken our turnover, he can have my prompt, immediate and careful attention."



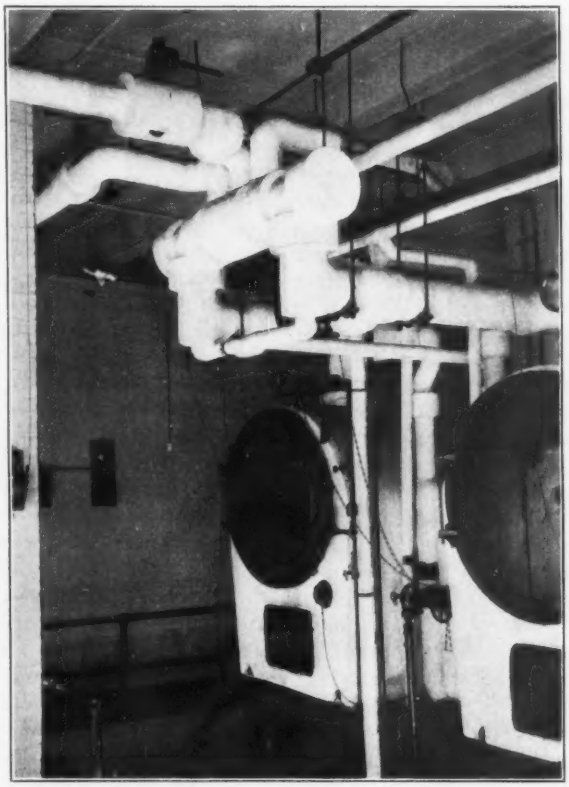
The Above Illustration shows the Action of a Unit Heater, Demonstrated with the Use of Smoke

This attitude is typical of industrial executives as a whole. We are living in a machine age and wide-awake executives are installing automatic machines of all descriptions to reduce overhead expense. Shop practice in entire industries is being revolutionized in order to effect the saving of even a few mills on such commodities as a barrel of cement, a hundred pounds of coal or steel or a hundred bricks. But two courses are open to those companies who fail to follow this trend. One course is to merge or consolidate with other concerns; the other is to liquidate the business. This is merely another way of saying that manufacturers have found that it is sounder economics to cut costs than to raise prices, since the latter policy is likely to check consumptive demands.

Fixed charges are the bane of the manufacturer. It is this feeling which prompted an executive in one of the Connecticut factories to say the other day, "Show me a machine which will not have to be replaced for five years and which will take the place of one man on our payroll and if it does not cost over $20,000 I will buy it." This man did not mean for a moment that he wanted to fire a lot of men. What he wanted was to produce more goods with the same number, and still be in such shape that his fixed charge could be held down in time of depression.

This manufacturer was interested in an automatic temperature control and asked me to give him an estimate of installing the equipment in the entire factory. Realizing that as a general rule his office was heated from the same plant that supplied the rest of the factory, I inquired whether the steam line to the office was a separate line. He said, "Oh yes, it is our policy to start the heat in the early fall to supply the office without wastefully heating the rest of the factory."

Although this man was well informed, he did not known until after our examination that quite a number of radiators on the office line supplied the factory. This condition caused overheating and fuel loss in the factory during the period when the office was heated in early fall and spring. After receiving our recommendation, the necessary pipe changes were made in order to separately control the office, which requires at all times a higher temperature than the operating departments.



An Installation Showing Independent Control of Steam Mains Serving Different Parts of a Building

It is my experience that most industrial plants waste a considerable amount of fuel and lower the efficiency of their workers by overheating various departments. This is particularly true in early fall months and late spring. The boilers are generally run at a given pressure and the engineer tries to maintain this pressure during working hours. In almost every factory certain conditions exist which tend to raise the room temperature, such for example, as moving machinery, body temperature given off by a number of men occupying various departments, or furnaces or machinery throwing off heat. This natural heat can be utilized to maintain the proper room temperature desired, at the same time using the minimum amount of artificial heat.

It must be understood also that the outside temperature is constantly changing. The wind direction plays an important part in heating the building. The sun's rays affect different sides of the building, causing the overheating in one part while a comfortable temperature is maintained in another part. In the average building or factory when 70 degrees is maintained on the north side, the south and west sides of the building are generally overheated 10 to 12 degrees. Such conditions can be overcome by automatic temperature control operating valves inserted in the various steam lines supplying risers and radiators to different parts and sides of the building.

Most authorities recommend for health, comfort and efficiency of workers, the following temperatures: light office work, from 68° to 70°; where average physical exertion is required and moving machinery is installed, 66°; strenuous factory work, 64°. These can be maintained efficiently only by automatic means, because otherwise someone would be required to constantly watch thermometers and operate hand valves supplying the heat to various departments. If one steam line is allowed to overheat for only fifteen minutes it means a loss of fuel. Instead of employes operating valves it is customary to open windows and endeavor to heat outdoors.

In a great many factories buffing machines with exhaust fans are installed, which constantly removes heated air at high velocity. This causes an excessive demand upon the heating plant and unless automatic control is used in other departments where conditions are different, wasteful overheating is bound to result. Automatic temperature control of steam valves supplying different departments and sides of

the buildings make it possible for any particular part to call for heat and have steam delivered only to that part as required. Automatic temperature control prevents the overheating which causes headaches, fatigue and slows production by reducing the efficiency of the employe. By maintaining a temperature within two degrees, fuel is saved and the manufacturer, by having more healthful working conditions, receives the full benefit of the employes' effort.

A great number of factories have discarded the wall radiation or direct radiation and revolutionized their heating costs by the installation of what is known as unit heaters. One of the many advantages of unit heater installations in factories is that such a heater can be salvaged in case of any remodeling. The common type of unit heater is known as the recirculating type and is suspended about 15 feet above the floor or placed near the ceiling. A series of heating coils are enclosed in a galvanized or sheet iron duct with a high velocity fan recirculating air through the heated coils, blowing it directly towards the floor or on an angle, with one outlet or more pointing in different directions. This rapidly stirs up the air and eliminates hot and cold spots. It has a tendency to pull the heated air from the ceiling, forcing the cold strata of air off the floor. It is possible to get perfect temperature with a unit heater and it is the ideal method of heating a large open floor area for the temperature can be raised quickly and efficiently. Many factories have difficulty in heating to the desired temperature on Monday morning after the shut-down over Sunday. In such instances the unit heater is much more efficient than direct radiation, preventing loss of time caused by workers' idleness when the building is not heated for proper working conditions.

The unit heater has shown economy in operation through the amount of condensation loss. One large manufacturer who is converting an entire plant from direct radiation to unit heater control stated that their condensation meter records show that if their entire plant was under thermostatic control of the clock type, they would show a saving of approximately $90 a day over the old method.

The thermostats used in controlling the unit heaters consist of two types; one completely controls the motor on the unit heater as well as a steam valve supplying heat to the unit and control on the return steam line. This is known as full automatic 3-position motor control and effects a considerable saving in line loss of steam through condensation, although costing a little more than the single thermostatic control operating the fan on the motor only. The other type controls the circulating fan motor only, starting and stopping the motor when calling for more or less heat.

In such buildings as garages and storerooms where not over 55° would be maintained, it is advisable to use the single control operating the motor fan only. Where there are a number of workmen and a higher temperature is to be maintained such as 66° or 68°, it is much better to use the full automatic control, as generally more units are installed in such departments and it makes the system more flexible to control different areas of the room. A number of units may be supplied from the same steam line and controlled with one thermostat.

A great many factories have the indirect method of heating with coils installed in the basement enclosed in ducts taking in cold air which passes over the heated coils and is forced to different parts of the building by large fans. The method employed to regulate temperature with this system is to control dampers in the ducts located in different departments. Without automatic control employes must manipulate dampers, generally located near the ceiling, by hand. When overheated, the common tendency is to open the windows, which of course, causes more waste.

When the valves close and different departments are satisfied, in a building equipped with automatic control operating balanced lever valves in the steam lines, the pressure is confined to the boiler and the pressure control located at the boiler operates the control dampers preventing unnecessary waste and maintaining a given pressure automatically.

In theory it is quite a simple matter to shut off steam by manual operation when the desired temperature is reached and to turn it on again when the temperature drops; but in actual practice the matter is complicated by certain conditions, so that automatic and mechanical control becomes desirable.

The principal conditions that should be taken into consideration may be classed under the following heads:

1. Weather conditions, outside and inside temperatures.
2. The element of human carelessness and forgetfulness.
3. Overheating and underheating.
4. First cost of installation and upkeep.
5. How much can be saved by temperature control?

Weather Conditions

Fluctuations in Temperature

Heating specifications for public buildings in New England are figured on the basis that the heating system shall raise the inside temperature to 70° F. with the outside temperature at zero. This means that the heating system must have sufficient radiation to meet this demand in coldest weather.

It is surprising to know that in Chicago, for instance, the most extreme cold prevails only on six days of the year.

Temperature comparison taken from the American Gas Association's records, shows that New York has 5,160 degree days as compared with Chicago's 6,420. The average winter requirement is about 200 heating days in cold climates and 150 days in milder climates.

In New York City the total heating requirment per month, when measured in percentage of the total heat requirements for the season will vary as follows:

October	5%
November	12%
December	17%
January	19%
February	19%
March	15%
April	10%
May	3%

Converting these figures into degree days, they are:

October	9
November	21
December	31
January	35
February	34
March	27
April	17
May	6

This means that daily during these months, artificial means will be necessary to raise the inside temperature 9 degrees in October, 21 degrees in November, 31 degrees in December, 35 degrees in January, 34 degrees in February, 27 degrees in March, 17 degrees in April, and 6 degrees in May.

If specifications for the heating system call for 70 degrees at zero weather and the average mean outside weather requirement is 34 degrees, the difference between 70 degrees, the capacity of your heating system, and 34 degrees outside temperature is 36 degrees. Therefore this 34 degrees outside temperature makes it necessary to raise the temperature in the building 36 degrees, leaving the heating plant with a capacity of reserve or over radiation of 34 degrees, or, say one-half the capacity of the system.

Unless some means of reducing this reserve is used and the steam is allowed to radiate, the waste of heat is in proportion to the number of degrees the building is overheated and the amount of heat dissipated by the employes opening windows in order to obtain a comfortable room temperature.

This waste is naturally increased in proportion as the outside temperature increases and the heating demand grows less in the warmer months. Actually only from 40 to 60 per cent of the maximum capacity of the radiation is being used through the greater part of the heating season. Now what becomes of the difference?

Eliminating the Element of Human Error

The difficulty in controlling heat without some means of automatic regulation lies in the impossibility of maintaining uniform temperature by manual operation of the service valve. This responsibility is placed entirely with the engineer, superintendent or janitor and unless that party makes special trips through the building and reads the thermometers placed on various floors (which very few buildings have) he does not know when to shut off or turn on the steam.

The usual routine is to turn on the heat at a certain hour in the morning and shut it off about ten or eleven o'clock, regardless of the outside temperature, or the building temperature. In other words, 90% of manual control is guesswork. Even this routine for manual control is seldom carried out systematically, as the engineer has other duties to perform.

Results of Overheating

The outcome is that when a building is overheated the first thing in the morning the employes, if uncomfortable, do not turn off the radiator valve, but open the windows to cool off the room.

By the use of a heat regulator this is eliminated to a great extent, as the regulator will shut off the steam before the temperature becomes excessive, and before windows are opened. That, in fact, is the keynote to economical heating — " shut off the steam before the employes open the windows." If this can be done there will be surprising savings effected in the steam bills of any factory.

If heat is allowed to run above 70 degrees in the morning and then is dropped to 65 or 68 later, there will be more complaints than

if the building was 65 or 68 when the offices were first opened. The reason for this is that a person coming in from an outside temperature of 40 or 45 degrees feels the change in the temperature of 68 degrees and is comfortable if that temperature is continued without a change of over one or two degrees, whereas if over 70 degrees is carried and the temperature dropped after several hours the blood circulation of the body is slower and the change is noticed.

First Cost and Upkeep

The necessity of some means of control is obvious, but the question arises of what is most efficient and economical from the standpoint of first cost and upkeep? Naturally, the more perfect the control installed, the greater should be the saving; but the more elaborate it is, just that much greater is the first cost of installation and after that the cost of upkeep and the necessity of experienced men to keep it in operative efficiency.

Installation of this class of control in buildings already constructed is prohibitive, as the cost would be out of all proportion to the amount of saving made, unless taken from the standpoint of comfort and not of economy.

The need of some automatic control which can be installed at moderate cost and small upkeep, operating as a limiting device on the main control valve, shutting the heat off when the desired temperature is reached and turning it on when the temperature is dropped one or two degrees, is the most logical, and from tests taken over a period of years shows some surprising results both from the efficiency and economical standpoints.

Quoting from the " Report of the Heat Utilization Committee " in a 1924 bulletin of the National District Heating Association, comprised of representatives of the central steam companies throughout the United States and Canada, comment was made on a paper entitled " Unit Thermostatic Control in Large Buildings " which discussed the value of unit thermostat control in buildings previously considered too large for this type of control. The committee stated, " This is a revelation to the committee and may open a new field for this apparatus."

Intermittant control may show a saving but has many objections and demands closer attention than the unit thermostatic control. It can hardly be called thermostatic, as it has no thermostatic features and the possibility of over or under heating, though somewhat lessened, is not by any means eliminated. In fact this control is nothing more than a mechanical device that opens and closes a valve automatically and does not meet the requirement made necessary by fluctuating temperatures, which at times rapidly occur in this territory.

What is Saved by Automatic Control?

The question has often been put, " How much can be saved by thermostatic control? " This can only be answered by another question, " How much heat do you waste? " The only saving made by thermostatic control is the major part of that heat now being wasted by overheating a building and dissipation of heat through open windows.

In factories so far equipped with automatic control in the State of Connecticut, the saving in fuel has paid for the installation in three years after they were installed. When a manufacturer purchases automatic control for his plant it is like having a customer send him an unsolicited order each year represents all profit because it is a saving and furthermore costs nothing to sell.

The health feature of temperature control can be by no means overlooked. The United States Department of Health reports show that the working man of this country loses on an average of one and one-half days a year because of colds; also that four out of every ten men and seven out of every ten women have bad colds every winter.

Medical authorities agree that this disease causes more lost working time than any other and that it is also the source of many other diseases which enter the body when it has become " run down " and its resistance is low.

Investigations conducted by the New York Commission on Heating and Ventilating have disclosed the fact that there is a direct relationship between the temperature of a room and the frequency of colds. It is not low temperature which causes colds, in fact a high temperature is more often responsible. But the most dangerous of all is the continual fluctuation of the mercury and the Commission recommended that great care should be taken to maintain an even level.

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Taxation Department

Timely News on Federal and State Tax Matters Will Appear in This Department Each Month, Prepared for the Association by Hadfield, Rothwell, Soule & Coates

Agreements Under Section 606 of the Revenue Act of 1928

Section 606 of the Revenue Act of 1928 provides as follows:

CLOSING AGREEMENTS

(a) AUTHORIZATION. — The Commissioner (or any officer or employee of the Bureau of Internal Revenue, including the field service, authorized in writing by the Commissioner) is authorized to enter into an agreement in writing with any person relating to the liability of such person (or of the person or estate for whom he acts) in respect of any internal revenue tax for any taxable period ending prior to the date of the agreement.

(b) FINALITY OF AGREEMENTS. — If such agreement is approved by the Secretary, or the Undersecretary, within such time as may be stated in such agreement, or later agreed to, such agreement shall be final and conclusive, and, except upon a showing of fraud or malfeasance, or misrepresentation of a material fact —

(1) the case shall not be reopened as to the matters agreed upon or the agreement modified, by any officer, employee, or agent of the United States, and

(2) in any suit, action, or proceeding, such agreement, or any determination, assessment, collection, payment, abatement, refund, or credit made in accordance therewith, shall not be anulled, modified, set aside, or disregarded.

(c) Section 1106 (b) of the Revenue Act of 1926 is repealed, effective on the expiration of 30 days after the enactment of this Act, but such repeal shall not affect any agreement made before such repeal takes effect.

Revenue agents in making field examinations are now requesting that taxpayers sign agreements under this Section. The effect of such an agreement is to definitely close the year covered, thus eliminating the possibility of filing claims for refund in future. It appears, therefore, that if an examination of a return for a subsequent year discloses deductions held by a revenue agent to be proper for an earlier year, for which such an agreement has been signed, disallowances will be made by the revenue agent and an additional assessment recommended, although a claim for refund for the year in which the deduction should have been made, cannot be filed. Such a situation may readily arise in the matter of bad debts, on which differences of opinion as to year of proper deduction frequently occur. In most cases, it is not apparent that a taxpayer receives any benefit from signing such an agreement. Of course, the taxpayer is not obliged to sign unless he so wishes. Revenue agents do not explain the effect of signing such an agreement, when asking taxpayers to sign.

Because of lack of space the agreement form has not been printed here. Members desiring a copy will be furnished one upon application to the Association.

Field Examination of Federal Tax Returns

Under recent instructions issued by the Internal Revenue Bureau, revenue agents are making a more complete field examination than has ever before been the practice. In making such examinations, more attention may be given to the possibility of claiming additional taxes under the provisions of Section 220 of the Revenue Act of 1926. Similar provision has appeared in early revenue acts but the Treasury Department has not tried to apply same very generally in the past. This section of the law provides that, if any corporation, however created or organized, is formed or availed of for the purpose of preventing the imposition of the surtax upon its shareholders, through the medium of permitting its gains and profits to accumulate instead of being divided or distributed, there shall be levied, collected, and paid for each taxable year upon the net income of such corporation a tax equal to 50 per centum of the amount thereof, which shall be in addition to the tax imposed by Section 230 of the act.

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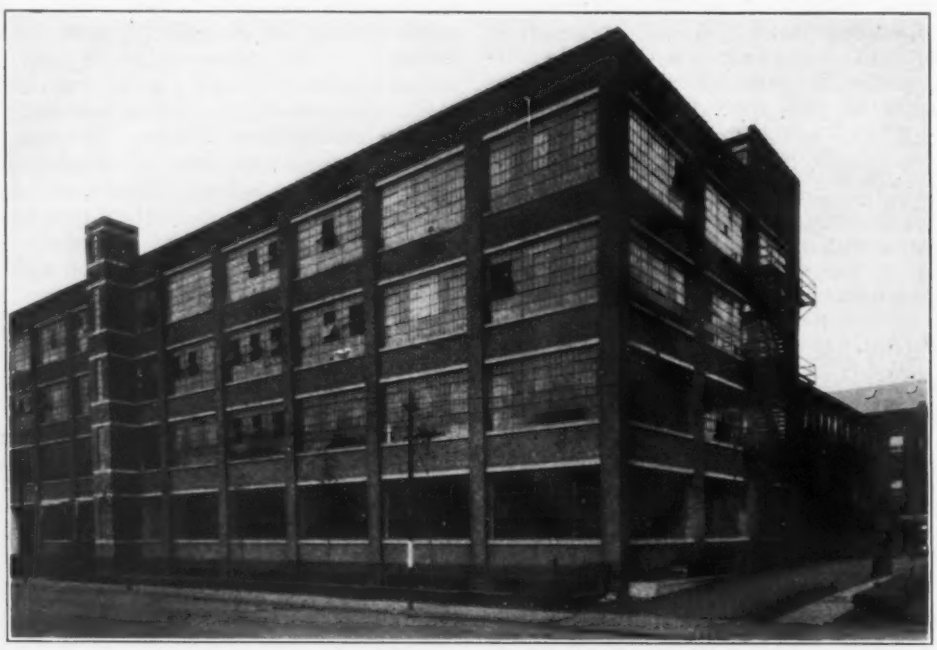
New Industries of Connecticut

No. 9. The Pratt and Whitney Aircraft Co.

By W. A. DOWER

The Pratt & Whitney Aircraft Company was organized in the Fall of 1925. It began operations in a small experimental shop of about 2500 square feet, employing a handful of workmen. The first year was entirely devoted to the design and development of a big displacement radial air cooled engine which is now the well-known "Wasp." Later, a still larger air cooled engine, the "Hornet," was perfected.



Plant of the Pratt and Whitney Aircraft Company

The "Wasp" almost immediately won official recognition from the Navy Department, and following a long series of flight tests was adopted for standard use in the Navy's single and two-place fighting ships. During 1927 "Wasp" engines were manufactured at the approximate rate of twenty monthly, a total of 253, representing a value of about three million dollars, being shipped in that year.

Both "Wasp" and "Hornet" engines have been in regular production during 1928. The rate of production has been increasing monthly. More than one hundred engines a month are being currently shipped, and new equipment is now installed to increase the volume to 150 engines monthly. It is expected that 1929 shipments may reach 200 monthly.

During 1927 the entire production of the company was for Navy requirements, but with the growth of air transport "Wasp" and "Hornet" engines are meeting with a broad commercial application, with the result that at the present time two-thirds of current shipments are for installation in purely commercial types. Ford, Fokker and Boeing all employ Pratt & Whitney engines in their giant trimotor transports, which are being extensively used in air mail and long distance passenger transportation. "Wasp" and "Hornet" engines are installed in no less than thirty-six types of commercial ships, and no less than twenty transportation companies use Pratt & Whitney engines in whole or in part in connection with their operations.

The Pratt & Whitney Aircraft Company now occupies a quadrangle of buildings providing approximately 250,000 square feet of floor space. The number of its employes is nearing one thousand.

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AND A 20% DIVIDEND ON COMPENSATION INSURANCE

THE severest question you can ask of an insurance company is: "What percentage of your policyholders renew each year? To this question, the American Mutual answers "96% of our policyholders renew with us each year". . . a wonderful endorsement of American Mutual Service—and by those who know.

In the experience of 500 policyholders, our engineers have reduced "days lost per employee" 53.8%... certainly a tangible evidence of service.

Dividends of never less than 20% have been paid to policyholders since 1887. Let us send you complete information about our Workmen's Compensation Insurance . . . just fill out and mail the lower part of this page.

To Owners of Commercial Cars

The Engineering Department of the American Mutual has studied the operating condition of truck fleets that have operated as badly as 5,000 miles per accident. By instituting systems of safety American Mutual Engineers have improved some of these records to the extent that they now operate as high as 150,000 miles per accident. Let us send you one of our booklets the *"Automobible"* and *"The Man at the Wheel"*

AMERICAN MUTUAL

To the American Mutual Liability Insurance Co.—
Please send me full information about your Service Security and Saving.

Name _____

Address _____

Write to one of our Connecticut offices: 1188 Main Street, Bridgeport or 226 Pearl Street, Hartford.

Foreign Trade With a Social Aspect

AS the bleak winds blow and the snow whirls around in drifts, a happy party of Industrialists from New England will be cruising the Golden Caribbean next January — on the "New England Industrial Cruise de Luxe" now being formed. The date is Saturday, January 19th, the palatial ship the famous *S. S. Calamares* of the Great White Fleet.

It is a cruise of business and pleasure combined. Too few realize the potential markets that lie so close to the south of us. A few facts will surprise and invite your attention. Cuba has an area of 44,164 sq. miles, with a population of 3,370,000. In 1925 their per capita imports were $45.27, of which $28.20 was from the United States. Right here is a potential market of $17.07 per capita. Our exports to Cuba last year amounted to $155,383,000.

A Typical Scene

Jamaica has an area of 4,207 square miles, and a population of 1,683,000. Kingston harbor, the finest in the West Indies, has an area of about 16 sq. miles. In 1925 the per capita imports from the United States were $13.04. Last year our exports amounted to $8,641,000.

One of the Attractions

Panama has an area of 32,380 sq. miles, and a population of 446,000. Per capita imports in 1925 were $32.87, of which $20.09 was from the United States. About 30% of our total trade with the Central American countries is with the Republic of Panama which takes nearly 30% of our exports to that region. Last year our exports amounted to $34,051,000.

Costa Rica has an area of 18,691 sq. miles, with a population of 500,000. Her per capita imports for 1925 were $24.00, of which $13.61 was from the United States. Last year our exports amounted to $7,297,000.

Whether you are a wholesaler, retailer, manufacturer, or engaged in any other business activity in New England, these people are potential prospects for you, whether it be products, manufactured articles or whatnot. By personal contact with them you will better learn their ways and how to prepare your goods for proper handling under their diverse traffic facilities. You will more fully understand their credit and banking systems, methods of doing business, and the actual wants of the people. Every assistance will be given the party members to make contact with the leading business men, and to secure informational data. Chambers of Commerce and similar organizations in the various cities visited will extend every opportunity to study their markets closely. There is a host of trade in these foreign countries nearby, and here is an exceptional opportunity to open up new markets and increase your exports.

You will experience a delightful 22 day cruise, new sights, new scenes on every hand, and be provided enroute with all the comforts you are accustomed to at home. Those who participated last year have nothing but praise for the arrangements. Full details of the itinerary will be found in the enclosed leaflet. If you will designate your travel requirements we will be glad to make your reservations through this office.

Transportation Department

Bus Tax Held Unlawful

In 1927 the Legislature of the State of New Jersey enacted a law levying a tax of 1½¢ a mile on buses and trucks using New Jersey highways in interstate business as common carriers. Vice-Chancellor Buchanan, in an opinion filed October 11th declared the statute to be unconstitutional. The Vice-Chancellor held that is was arbitrary legislation and that it was in contravention of the constitutional provisions dealing with interstate commerce. Interested members will be advised of the details of the opinion upon application.

Consolidated Southwestern Cases I. C. C. 14,880, etc.

The Interstate Commerce Commission reopened hearings on the Consolidated Southwestern Cases on September 17th at the Merchants Association in New York City. Representatives of over fifty organizations and companies from cities in the middle western, the southwestern and eastern sections of the United States were present. The Manufacturers Association of Connecticut with its Commerce Attorney, Mr. J. J. Hickey was represented by ten witnesses.

On October 8th hearings were resumed in Galveston, Texas, and the Association was represented by Mr. W. F. Price, a member of the Traffic Committee of the Association. It would be inadvisable to give any opinion concerning the outcome of the case at the present time but it may be stated that the officers and directors of the Association are well satisfied with the presentation of the case of Connecticut manufacturers.

Ownership American Railway Express Company by Carriers

The Association of American Railway Executives has announced that 80% of the railroads participating in the plan for the taking over of the American Railway Express Company by the carriers have approved. Since the plan called for acceptance by 75%, it is generally conceded that the American Railway Express will soon pass out of existence as a separate organization. As far as the Traffic Department of the Manufacturers Association has been able to determine operating conditions as far as they affect shippers will undergo no change.

Milling and Transit Rates — Box Shooks

The Chaffe Brothers of Oxford, Massachusetts, have filed a petition requesting the granting of milling and transit rates on lumber to Connecticut points. Interested members may receive full information in regard to this case by applying to the Association's headquarters.

Annual Meeting

One of the features of the annual meeting of the Association which is to be held on November 7th at the plant of Cheney Brothers in South Manchester, Connecticut, is a transportation group conference. It is expected that an interesting motion picture film will be shown and that discussion will be centered around important transportation cases now pending. It is the hope of the Traffic Department that all Traffic Managers in the State will attend this group conference.

Cooperation

The National Folding Box Company has issued a very interesting and attractive circular which contains a photograph of the "New Haven Type" three cylinder freight locomotive built by the American Locomotive Company for the New York, New Haven and Hartford Railroad. The circular also contains facts as to speed and equipment of these locomotives and concludes with the statement "We constantly receive friendly comments on the speed of our deliveries, not only through our plant but in transit. The latter is due to the superior transportation service rendered by the New Haven Railroad. By installing the new type of freight locomotive described above and by completing the 'Cedar Hill' freight terminal on 1160 acres near our plant, a transportation service is rendered unsurpassed in America. In this terminal 64 eastbound and 64 westbound tracks make it possible to handle over 4000 cars daily." The reports which are received by the Association each month on off line transfer service are indicative of the truth of the above statement as to excellence of service. Whereas a comparatively few years ago 75% efficiency was considered satisfactory, Connecticut shippers are today enjoying an efficiency of between ninety-eight and ninety-nine per cent.

The National Folding Box Company has taken the lead in pointing out the benefits of cooperation as between the shipper and the carrier.

Items of Interest

Traffic Management

President Hubbard in an address before the New England Shippers' Advisory Board in Bridgeport on October 21, referred to a survey being conducted in cooperation with the United States Department of Commerce for the purpose of determining the place of a well organized traffic department in an industrial concern.

The survey carried on by the Association discloses some very interesting facts, most of which tend to prove that Connecticut manufacturers have not fully appreciated the importance of traffic management. An analysis of this survey follows:

ANALYSIS BY INDUSTRIES

TRAFFIC MANAGEMENT SURVEY
AS OF OCTOBER 6, 1928

Industry	Total Number Plants	% With Organized Traffic Depts.	% Subscribing to Traffic Publications	Size of Plants by Number of Employes			
				Min.	Median	Average	Max.
Brass and Copper	11	36.	36.	15	492	1954	7395
Hardware	22	18.1	31.8	16	162	677	4477
Other Metal Products including Tools and Machinery	137	14.5	26.2	5	121	442	5734
Textiles	51	13.7	23.5	12	197	485	3627
Clothing	9	33.3	33.3	50	375	485	1101
Paper	17	23.5	29.4	3	98	136	600
Rubber	5	60.	60.	12	300	1119	4763
Electrical Goods	12	25.	58.3	11	86	300	1466
Utilities	5	0.	20.	27	72	175	590
Food Products	2	100.	100.	150	—	298	446
Other Manufactures	37	16.2	43.2	6	45	138	1322

ANALYSIS BY GROUPS

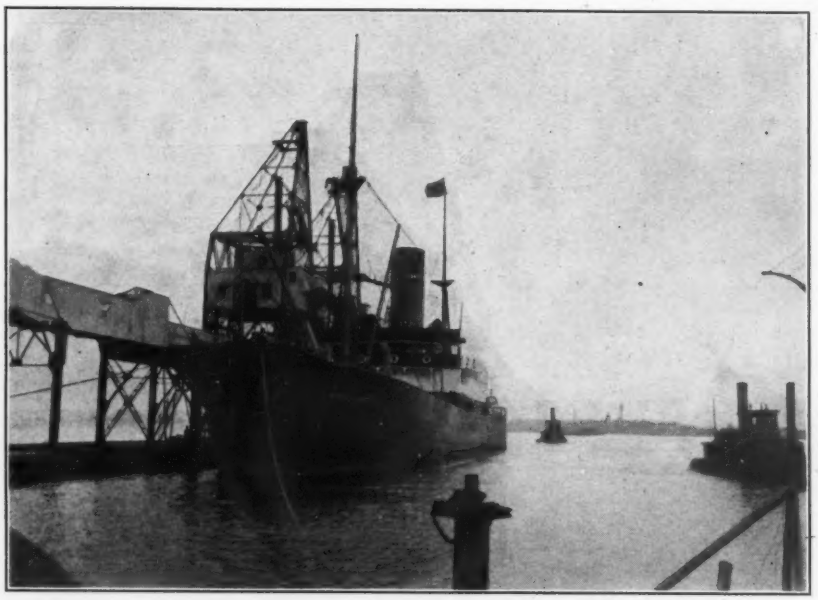
	Number of Employes			
	Less than 100	100-500	500-1000	Over 1000
% With Organized Traffic Depts.	5.1	17.5	37.	77.1

J. E. Wuichet, the representative of the Bureau of Foreign and Domestic Commerce attached to the staff of the Manufacturers' Association headquarters, recently spent three years' salary on luncheon for government officials. Mr. Wuichet is a dollar-a-year man.

The Brussels Fair

Through the Vice Consul of Belgium at Hartford, Connecticut, an announcement comes of the Tenth Anniversary Official and International Commercial Fair, organized under the patronage of the municipality of the city of Brussels, with the cooperation of the Belgian government. This important industrial and commercial fair is to be in progress from April 10 to April 24, 1929.

Every opportunity is to be afforded the American manufacturer for exhibition of his products. Those manufacturers who are interested in the development of Belgian trade might well investigate. Further details may be secured from the Association headquarters at Hartford.



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Approximately 100 wooden hogsheads, 31" in diameter x 34" deep, new and complete.

Address S. E. 186.

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Air Compressor

One Ingersoll-Rand air compressor in good condition with or without the necessary motor. Must give pressure between 80 and 100 pounds.

Address S. E. 187.

Boiler

Steam heating boiler, capable of heating floor space of approximately 5000 square feet. Spencer type furnace preferable.

Address S. E. 188.

FACTORY SPACE

27. FOR RENT. In New Haven, 7,500 sq. ft. factory space and 7,500 sq. ft. land. Railroad siding. Occupied at present by steel products manufacturer. Would consider consolidation with suitable business.

28. FOR RENT. In Meriden, about 50,000 sq. ft. of exceptionally good factory space located in various buildings. Heavy mill construction, good light all around, thoroughly equipped with heat and toilet facilities. Diagram of layout of buildings available at this office.

29. FOR RENT OR SALE. In Middletown. Stone factory building, one story, concrete floor. Equipped for heat, light and sprinkler service. Suitable for any kind of manufacturing. Available adjacent property touches on navigable river front and railroad siding. Photographs and diagram in this office.

34. FOR SALE. In Milford, factory building 20,000 sq. ft., 3½ stories, freight elevator, automatic sprinklers, 100 H. P. Bigelow boiler, 30 H. P. steam engine, good light, on lot 133 x 237, adjoining freight siding.

35. WANTED. About 10,000 to 20,000 feet factory space anywhere in state. Suitable for small airplane industry.

A well-known concern with an established sales outlet of $500,000 in metal toys and specialties is desirous of negotiating with a responsible manufacturer possessing sufficient equipment and space and capable of making satisfactory arrangements for this additional volume of business.

Will furnish dies and tools and experienced engineer to supervise the department.

Employment Service

This department is open to members free of charge. All copy must be in the hands of the editor by the fifteenth day of the month preceding publication.

SALES MANAGER — Age 33. Married. University education. Six years' experience in factory production. More recently sales manager covering all lines of merchandise involving market surveys and installation of distributors. Familiar with all elements of merchandising. Address P. W. 341.

SALESMAN — Age 32. Married. Experienced in opening up new territories, investigation and making surveys of sales possibilities. Desires immediate connection in commercial and industrial research work. Address P. W. 346.

MANUFACTURING EXECUTIVE — Age 32. Yale graduate. Experienced in machine shop and steel heat treating. Also manager of paper converting plant. Familiar with office detail, costs, industrial engineering, sales, buying and manufacturing details. Address P. W. 347.

METALLURGIST — Age 38. Yale Sheffield graduate. Fifteen years' experience with Connecticut manufacturing concerns. Understands all phases of laboratory work. Address P. W. 348.

FOREMAN — Age 45. English. Married. Twenty years' experience supervising castings. Address P. W. 349.

EXECUTIVE — Man formerly in business for himself handling financial and sales end desires position in either capacity with manufacturing concern. Address P. W. 350.

OFFICE MANAGER — Age 35. College graduate. Experienced as accountant and in costs. Address P. W. 351.

TRAFFIC MANAGER — Freight solicitor who has held position of traffic manager. Experience in settling claims. Address P. W. 352.

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